

REMARKS

The Office Action mailed April 15, 2009 has been reviewed and reconsideration of the above-identified application in view of the following remarks is respectfully requested

Claims 1-14 are pending and stand rejected.

Claims 1 and 14 are independent claims.

No claims have been amended.

Claims 1, 2, 6, 7, 8 and 10-14 stand rejected under 35 USC 102(e) as being anticipated by Friend (USP no. 6, 429, 601). Claims 3, 4 and 5 stand rejected under 35 USC 103(a) as being unpatentable over Friend in view of Yamazaki (USP no. 6, 326, 941).

With regard to the rejection of claims 1, 2, 6, 7, 8 and 10 under 35 USC 102, the Office Action refers to Figures 7 and 8 of Friend for teaching the element of dividing a frame and in at least a first sub-period carrying a first non-zero current and a second sub-period carrying a second non-zero current.(Figures 7 and 8 and col. 7, lines 18-35).

However, a review of this section reveals that Friend teaches a system for fixing a brightness of a pixel during a cycle by turning pixels on and off rapidly with a duty cycle that achieves the desired brightness from each pixel when averaged over time (for the duration of a cycle). (see col. 6, line 66-col 7, line 1).

Friend disclose "... if half-brightness is desired (e.g., a brightness of 32 in the 64 grey scale scheme mentioned above) the pixel is switched so as to be fully on for half of the time and fully off for half of the time." (see col. 7, lines 3-5). In the example disclosed by Friend, a duty cycle of 50 percent during a display cycle results in a half-brightness condition.

Thus, with regard to Figure 7, for example, Friend discloses different on/off combinations (duty cycles) to achieve different brightness levels within each of three different display cycles, wherein a display cycle is defined by the boundary lines 36. See col. 7, lines 18-25, which state, in part, "...to achieve the desired brightness of each pixel

...[t]he pixel (except when it is desired to be at full or zero brightness) could be turned on once and off once in each cycle with the time between the on and off switching chosen to achieve the required duty cycle."

Figure 7, thus, represents the different duty cycles (on/off times) for different brightness values in each of three different display cycles. Figure 8 illustrates a pulse driving condition similar to that shown in Figure 7, wherein during each display cycle (36) a driving circuit has a first on/off duty cycle that occupies the "on" cycle shown in Figure 7 and during the second cycle (i.e., the off cycle) the drive circuit is off.

However, assuming that the cycle (i.e., between label 36 boundaries) is comparing to the periods F1 and F2 recited in the claims, Friend discloses that the current is "non-zero" during the "on" period (F1) and "zero" during the "off" period (F2). Hence, Friend fails to disclose that element of a "non-zero" current during the second period," as is recited in the claims. A similar argument may also be presented for the drive conditions shown in Figure 8, wherein the pulse operation refers to the "on" period (F1) and the non-pulse period refers to the "off" period (F2). Again, Friend fails to disclose a "non-zero current" during the period F2.

Alternatively, assuming that the three cycles illustrated represent one frame of the instant application, then defining the periods of F1 and F2 is difficult as both Figures 7 and 8 illustrate periods of "on" and periods of "off." However, however the "off" periods is defined, the current during this period is still at a zero value.

Hence, contrary to the assertions made in the Office Action, Friend fails to disclose a period F1 having a first non-zero current and a second period F2 having a second non-zero current, as is recited in the claims.

A claim is anticipated if and only if each and every element recited in the claims is taught in a single prior art reference.

In this case, Friend fails to disclose all the elements recited in the claims and, hence, cannot be said to anticipate the subject matter recited in the independent claims.

For the above remarks, applicant submits that the reason for the rejection has been overcome and, respectfully requests that the rejection be withdrawn.

With regard to the remaining claims, these claims depend from the independent

claims and, hence, recite subject matter not disclosed by the cited reference.

With regard to the rejection of claims 3, 4 and 5 under 35 USC 103(a) as being unpatentable over Friend in view of Yamazaki, applicant respectfully disagrees with and respectfully traverses the rejection of the claims.

Yamazaki discloses a gradation system for an electro-optical device controlled through a digital circuit. The gradation system uses both variable pulse width and variable voltage to determine a gradation value. Yamazaki discloses that in a conventional 64 level gradation system, gradation may be achieved by a combination of a total of 6 pulses whose width is 1, 2, 4, 8, and 32 and that by varying the pulse height into four steps (levels) 1, 2, 3 and 4, only 3 pulses having pulse width of 1, 4 and 16 need be used. (see col. 4, line 64-col. 5, line 2).

Yamazaki, accordingly, teaches using the pulse width as a factor in transmitting a value and fails to teach that the pulse width is related to a frame or sub-frame size, as is recited in the claims.

A claimed invention is *prima facie* obvious when three basic criteria are met. First, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings therein. Second, there must be a reasonable expectation of success. And, third, the prior art reference or combined references must teach or suggest all the claim limitations.

Claims 3, 4 and 5 depend from claim 1, which has been shown to include subject matter not disclosed by Friend. Yamazaki fails to provide any teaching to correct the deficiency found to exist in Friend.

Accordingly, the combination of Friend and Yamazaki cannot render obvious the subject matter recited in the independent claims, as the device resultant from the combination of Friend and Yamazaki fails to disclose a material element recited in the claims.

For the above amendments to the claims and the remarks made herein, applicant submits that the rejection of the claims has been overcome and respectfully requests that the rejection be withdrawn and a Notice of Allowance be issued.

Applicant denies any statement, position or averment stated in the Office Action that is not specifically addressed by the foregoing. Any rejection and/or points of argument not addressed are moot in view of the presented arguments and no arguments are waived and none of the statements and/or assertions made in the Office Action are conceded.

In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is invited to call the undersigned attorney at the telephone given below. No fees are believed necessary for the timely filing of this paper.

Respectfully submitted,
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